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**Examining the Roles of Resilience and Belonging as Mediators in the  
Association between Positivity and Anxiety among Underrepresented  
College Students**

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**Examining the Roles of Resilience and Belonging as Mediators in the  
Association between Positivity and Anxiety among Underrepresented  
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**by**

**Jaylen Isaiah Wright**

**Thesis**

Presented to the Faculty of the Graduate School of  
The University of Texas at Austin  
in Partial Fulfillment  
of the Requirements  
for the Degree of

**Master of Science in Health Behavior & Health Education**

**The University of Texas at Austin**

**August 2019**

## **Dedication**

This thesis is dedicated to my family, mentors, and peers who provide me with daily encouragement and have shown me an abundance of love and support.

## **Acknowledgements**

I would like to honor and sincerely thank my advisor Dr. Mary Steinhardt for the amount of emotional support, scholarly advice, and professional inspiration that she provided me through every phase of this project. I was fortunate to have an advisor who always encouraged me and offered invaluable guidance and feedback throughout this long process. I would also like to thank my reader, Dr. Alexandra Loukas for her enthusiasm to support me by contributing her extremely valuable feedback. This work would not have been possible without the help of our lab members, Erum Whyne, Matt Lehrer, and Jihun Woo. I would also like to thank my DDCE family here at the University of Texas at Austin, without their continuous support much of this would have not been possible.

## **Abstract**

# **Examining the Roles of Resilience and Belonging as Mediators in the Association between Positivity and Anxiety among Underrepresented College Students**

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Objective: This study examined a conceptual model of resilience and sense of belonging as mediators in the association between positivity and generalized anxiety among underrepresented college students. Sample: Undergraduate students ( $N = 447$ ; 18.6% White, 18.1% Black, 39.6% Hispanic, 20.4% Asian, 3.4% Other;  $M_{\text{age}} = 19.06$  years; 62% female) completed an online Health & Well-Being survey. Methods: Controlling for age, sex, race/ethnicity, first-generation status, and living status, the proposed conceptual model was examined using path analysis in Mplus. Results: Positivity was negatively associated with anxiety directly ( $b = -.435, p < .001$ ) and indirectly through resilience ( $b = -.088, p < .001$ ), but not through sense of belonging ( $b = -.045, p > .05$ ). Although positivity was significantly associated with sense of belonging ( $b = .611, p < .001$ ), sense of belonging was not associated with anxiety ( $b = -.074, p > .05$ ). Conclusions: Results indicate that resilience partially mediates, or accounts for, the association between positivity and anxiety, whereas sense of belonging does not. This study warrants future investigation into

the potentially beneficial role of positivity and resilience resources in reducing anxiety for underrepresented college students.

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## **Chapter 1: Introduction**

Generalized anxiety disorders present the most prevalent psychiatric problems for college students, with an upward trend (11.9%) of college students reporting severe anxiety disorders (Blanco et al., 2008). The average college student experiences life through various lenses and intersecting identities while simultaneously transitioning, adjusting, and adapting to a new academic environment (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002). Many college students are potentially at risk for developing mental health concerns as a result of the college atmosphere adjustment and transitional stress (Arnett, 2014). On large university campuses, students coming from underprivileged and underrepresented backgrounds are exposed to additional stressors that put them at risk for developing anxiety disorders (Cokley, Hall-Clark, & Hicks, 2011). Despite these risks, the modern college student is considered to have a countless supply of extraordinary opportunities that are limited to those who pursue higher education at American colleges and universities, especially for students representing underprivileged backgrounds (Hurd, Albright, Nigrete, & Billingsley, 2018). As the fastest growing category of underprivileged and underrepresented students on the college campus, first-generation college students (FGS) make-up 34-40% of American university first-year/freshmen cohorts (House, Neal, & Kolb, 2019).

Characteristics of these minority student groups such as race and ethnicity, parent-level of education or employment, socioeconomic status, and sex/gender can all heavily influence a student's day-to-day life (Hurtado, Gasiewski, & Alvarez, 2015).

These characteristics can affect students' college experiences (Housel & Harvey, 2009), contribute to negative mental health outcomes, and influence their ability to adapt and comfortably seek out health knowledge and available resources (Lightweis, 2014). However, the broaden-and-build theory of positive emotions suggests that positive emotions and beliefs, including resilience and belonging, serve as personal resources for individuals to tap into when facing anxiety-filled adversity (Fredrickson, 2004). The purpose of this study is to use this model to examine the association between positivity and anxiety in a sample of underrepresented college minority students, and determine if resilience and sense of belonging mediate, or account for, this association.

### **State of Mental Health for Underrepresented College Students**

While there are numerous benefits and opportunities associated with the new challenges of entering a college environment, the transition can be uniquely difficult for students categorized as racial, ethnic, cultural, sexual, religious, or economic class-based minorities on large college campuses (Conley, Kirsch, Dickson, & Bryant, 2014). Despite the idea that college students have historically been viewed by society as a privileged population, underrepresented individuals face unique experiences due to their minority status that place them at an increased risk for mental health symptomatology, such as anxiety (Riley, Kirsch, Shapiro, & Conley, 2016). Anxiety is one of the most prevalent (41.6%) mental health concerns facing college students (American Psychological Association, 2013) and this estimate is likely higher for underrepresented students.

The state of mental health among college students has not only highlighted a need for increased campus resources to combat anxiety symptoms, but also poses a potential

crisis for underrepresented college minority students (McClain et al., 2016). Among this group, FGS, sometimes referred to as the ‘invisible’ minorities on campus, may encounter additional barriers to their successful college transition experience compared to non-first-generation students (Gloria & Castellanos, 2012; Zvolensky, Jardin, Garey, Robles, & Sharp, 2016). Some of these barriers include lack of financial support, knowledge of student support, academic preparation, and a general sense of academic confidence (Gloria & Castellanos, 2012; House, Neal, & Kolb, 2019). Other cognitive, academic, and personal factors can also promote frequent maladaptive behaviors that make it difficult for FGS to become socially engaged with their academic communities (Stuber, 2011).

This research has illuminated the ‘at risk’ nature of underrepresented minority college students, where the intersection of race, socioeconomic status, geographic location, and social support can negatively influence a student’s overall college experience (Olenchak & Hebert, 2002; Prospero & Vohra-Gupta, 2007). However, recent evidence suggests positive emotions help protect against stress and anxiety (Denovan & Macaskill, 2016). The broaden-and-build theory of positive emotions (Fredrickson, 1998, 2001) explains how positive emotions broaden one’s thought-action repertoire which over time builds psychological (e.g., resilience) and social (e.g., belonging) resources for individuals facing anxiety-filled adversity (Denovan & Macaskill, 2016).

### **Conceptual Model for the Proposed Study**

Fredrickson’s broaden-and-build theory of positive emotions (Fredrickson, 1998, 2001) serves as the theoretical framework for this study. According to the broaden-and-build theory, positive emotions can broaden a person’s cognitive and behavioral capacity

to adapt to changes in emotionally challenging circumstances or events (Avey, Wernsing, & Mhatre, 2011). Individuals who utilize positive emotions have an opportunity to expand their range of skills that enable them to feel resilient and to think and act in ways that promote resource building and action toward goals (Harding, Murphy, & Mezulis, 2019). On the other hand, dysregulated negative emotions increase an individual's susceptibility to various mental health concerns, including anxiety disorders (Fredrickson, 2004). While positive emotions serve as the key component to broadening one's thought-action repertoire, negative emotions serve to narrow these same mind-broadening repertoires (Fredrickson, 2001). The broaden-and-build theory presents a theoretical explanation for the enhanced relationship between positive emotions and the development of protective psychological resources over time that can produce consistent progress and psychological well-being as well as reduce negative outcomes, such as anxiety (Cohn, Fredrickson, Brown, Mickels, & Conway, 2009).

The build hypothesis of the broaden-and-build theory of positive emotions asserts that the presence of increased positive versus negative emotions over time drives and predicts the long-term building of psychological and social resources (e.g., resilience and belonging; Fredrickson, 2004). Positivity-driven individuals develop an open mindset that promotes the long-term building of psychosocial resources and adaptive mental health coping behaviors to protect against generalized anxiety.

### **Resilience and Belonging as Mediators**

Originating from Fredrickson's broaden-and-build theory of positive emotions, individuals who demonstrate positive adaptation following anxiety-based experiences of

adversity are commonly referred to as resilient. Resilience reflects an individual's ability to adapt to changing environments or 'bounce back' from stressful situations (Fredrickson, 2001). Resilient individuals tend to make adaptive coping attempts (i.e., positive reappraisal, humor, planning, and help-seeking) to address stress and anxiety invoking events (Cohn & Fredrickson, 2009), whereas less resilient individuals tend to engage in more maladaptive coping behaviors such as avoidance, withdrawal, hostility, and use of addictive substances (Moore et al., 2014). A critical component of mental health includes the ability to recover from adversity, otherwise termed as psychological resilience, and requires the flexibility to respond to life's constant changing of stressful circumstances (Fletcher & Sarkar, 2013). Students who display traits of high psychological resilience exhibit a positive sense of self-concept, confidence in abilities, optimism and positive emotions towards life, and effective problem-solving skills (Luthar, Cicchetti, & Becker, 2000). As such, students who are generally high in positive emotions are more likely to also display traits of high psychological resilience, which would in turn protect them from heightened levels of anxiety. Therefore, resilience may act as a mediator of the association between positive emotions and anxiety.

Similarly, sense of belonging may act as a mediator in the association between positive emotions and anxiety. A lack of a sense of belonging has been associated with mental health disorders (e.g., anxiety; Sargent, Williams, Hagerty, Lynch-Sauce, & Hoyle, 2002). Studies indicate that the problems that contribute to the "academically at-risk" nature of underrepresented students is rooted in the students' emotional and social adjustment to college and the sense of isolation felt on their campus (Olenchak & Hebert,

2002). Certain conditions make it difficult for underrepresented students, especially FGS, to become socially engaged with their academic communities, including living off-campus and strong-ties/commitments with family members and friends who are not involved with higher education (Stuber, 2011). The social integration and depth of campus involvement by the FGS positively influences their sense of ownership over their academic success and psychologically taxing demands (Pascarella, Pierson, Wolniak, & Terenzini, 2004). In turn, the presence of positive emotions that broaden a student's mindset may allow these types of students to be open to the formation of new relationships, leading to effective campus integration (Próspero & Vohra-Gupta, 2007) and improved adaptation to moments of anxiety (Sargent, Williams, Hagerty, Lynch-Sauce, & Hoyle, 2002).

### **Current Study**

Using the broaden-and-build theory (Fredrickson, 2001) as a framework, the purpose of the current study is to examine the association of positivity and generalized anxiety, and the mediating roles of resilience and sense of belonging in this association.

We hypothesize the following (Figure 1):

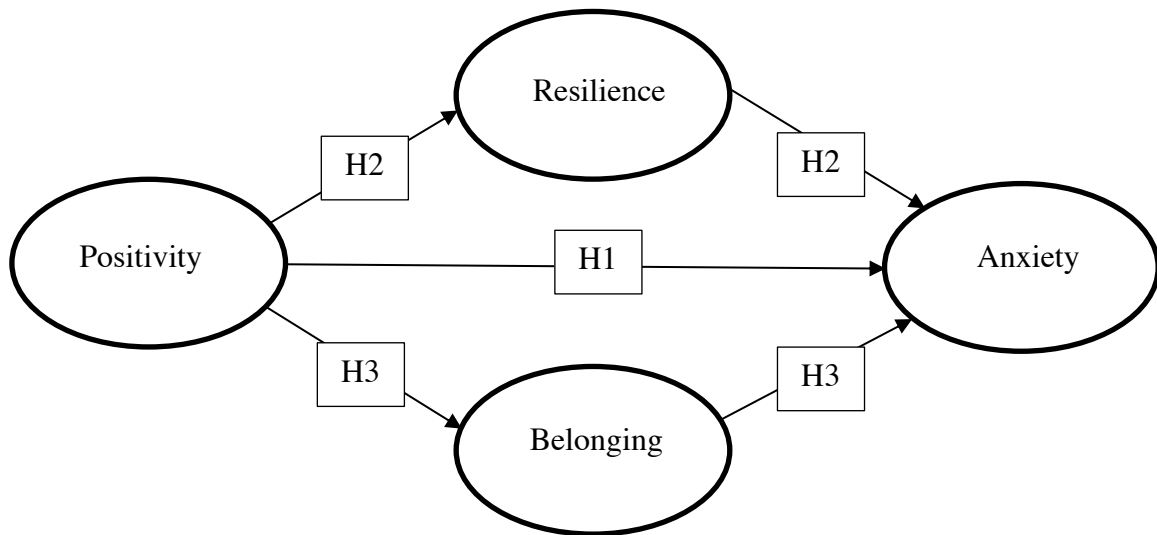
H1: Positivity will be negatively associated with levels of generalized anxiety.

H2: Resilience will partially mediate the negative association between positivity and generalized anxiety.

H3: Belonging will partially mediate the negative association between positivity and generalized anxiety.



**Figure 1.** Hypothesized Model for Resilience and Belonging as Mediators in the Association Between Positivity and Anxiety



## **Chapter 2: Methods**

### **Sample**

The undergraduate students ( $N = 447$ ;  $M_{\text{age}} = 19.06$ ) who participated in the study completed a questionnaire near the end of the Fall 2018 semester. Participant demographics were obtained through self-report, including gender, age, race, ethnicity, enrollment status (e.g., full-time), and their class year. Only students who were between the ages of 18-25 and classified as a current undergraduate were included in this study. Approximately 62.5% ( $n = 275$ ) of participants reported being female. Student classifications included freshman (73.6%;  $n = 329$ ), sophomore (7.6%;  $n = 34$ ), junior (9.2%;  $n = 41$ ), and senior (4%;  $n = 18$ ). Of these students, 62.4% ( $n = 279$ ) indicated that they were a first-generation college student, 51.5% ( $n = 230$ ) lived on campus, and 48.6% ( $n = 217$ ) lived off campus. The racial/ethnic demographics of student participants were Latino/a (39.6%;  $n = 177$ ), Asian (20.4%;  $n = 91$ ), African American (18.1%;  $n = 81$ ), and White (18.6%;  $n = 83$ ). Descriptive information of the study sample is presented in Table 1.

**Table 1.** Descriptive Statistics of Participant Demographics

Demographics	N	%
Sex (% female)	275	61.5%
Race		
White	83	18.6%
Black	81	18.1%
Hispanic	177	39.6%
Asian	91	20.4%
Other	15	3.4%
Year in School		
Freshman	329	73.6%
Sophomore	34	7.6%
Junior	41	9.2%
Senior	18	4.0%
Fifth year senior/other	25	5.6%
First generation (% yes)	279	62.4%
Living status		
On Campus	230	51.5%
Off Campus	217	48.5%

## Procedure

All data for this study were collected using a one-time 15-20 minute Qualtrics survey (Health & Well-Being survey) distributed from mid-November, 2018, through the end of the Fall 2018 semester. We specifically chose the two weeks between students returning from their Thanksgiving/end of November break and the beginning of final exam week because this seemed to be a timeframe where students would be exhibiting various levels of academic induced pressure. A flyer was used to recruit students who were enrolled in the underrepresented college minority student programs and initiatives provided by the Division of Diversity and Community Engagement (DDCE), and academic classes with permission from the professor. The students were recruited through in-person class

announcements, and those students who participated in the study were given a digital Personal Feedback Profile with their individual results and various personal resources for support based off their scores.

The complete Health & Well-Being survey contained a total of 169 items. The following primary outcome variables were measured: Perceived Well-Being and Mental Health (anxiety, depressive symptoms). The Qualtrics survey also included personal resilience variables (dispositional optimism, stress adaptation, positive/negative emotions, emotional regulation, resilience resources, coping strategies) and environmental resilience variables (items from the Gallup Purdue Index, belongingness, ethnic identity, social support). For this study, positive emotions, negative emotions, resilience, sense of belonging, and anxiety are the specific measures being assessed.

## **Measures**

### **Demographic Covariates**

For this study we controlled for age, sex, race, first-generation status, and living status (Table 1).

### **Positivity**

Positivity represents the ratio of positive emotions to the sum of positive and negative emotions. Positive and negative emotions were measured using the 20-item Modified Differential Emotions Scale (mDES; Fredrickson, Tugade, Waugh, & Larkin, 2003), which consists of 20 statements assessing the frequency of experienced positive (e.g., amused, calm, content, curious, happy, relaxed, relieved, satisfied, surprised) and negative (e.g., angry, anxious, blue, depressed, disappointed, discouraged, disgusted, sad,

tired) emotions over the previous two weeks. Response options ranged from 0 (*not at all*) to 4 (*most of the time*). Internal consistency was high for both positive ( $\alpha = .91$ ) and negative emotions ( $\alpha = .86$ ) subscales.

### **Generalized Anxiety**

Anxiety was measured using the 7-item Generalized Anxiety Disorder (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006) questionnaire, which assessed an individual's severity of anxiety symptoms. Participants reported how often they have been bothered by such problems as, "feeling nervous, anxious or on edge", and "worrying too much about different things" over the past two weeks. Response options ranged from 0 (*not at all*) to 3 (*nearly every day*) with a higher GAD-7 scale score representing greater generalized anxiety. Internal consistency for the GAD-7 was high ( $\alpha = .91$ ).

### **Resilience**

Resilience was measured using the 6-item Brief Resilience Scale (BRS; Smith et al., 2008), which assesses the capacity of an individual to adapt or recover from stress. Participants reported how they generally feel to such statements as, "I tend to bounce back quickly after hard times," and "It does not take me long to recover from a stressful event." Response options ranged from 1 (*strongly disagree*) to 5 (*strongly agree*), and a resilience score was calculated as the mean of all items. Internal consistency for the BRS was high ( $\alpha = .84$ ).

### **Belonging**

A sense of belonging (e.g., connectedness, affiliation, companionship) was measured using the 8-item Social Connectedness Scale (SCS; Lee & Robbins, 1995).

Participants were asked to rate the extent to which they agreed with statements such as, “I feel disconnected from the world around me,” and “Even around people I know, I don’t feel that I really belong.” Response options were taken on a 6-point Likert Scale ranging from 1 (*strongly agree*) to 6 (*strongly disagree*). Internal consistency for the SCS was high ( $\alpha = .95$ ).

### **Statistical Analysis**

Path analysis was performed in Mplus version 7.4 (Muthén & Muthén, 1998-2017) to test the model presented in Figure 1. Full information maximum likelihood estimation was used to handle missing data. The model tested the direct association of positivity with generalized anxiety, and indirect associations via resilience and sense of belonging. To account for covariance between the two hypothesized mediators, resilience and sense of belonging were allowed to correlate. Age, sex, race, first-generation status, and living status were included in the model as covariates.

### Chapter 3: Results

Table 2 presents means, standard deviations, and bivariate correlations among all continuous variables in the study. Anxiety was negatively correlated with positivity, resilience, and belonging. Positivity was positively correlated with resilience and belonging, and the resilience and belonging mediators were positively correlated.

**Table 2.** Means, Standard Deviations, and Correlations for Continuous Variables

Measure	Mean (SD)	1	2	3	4	5
1. Age	19.06 (1.60)	—				
2. Positivity	62.04 (14.52)	-.08	—			
3. Resilience	3.39 (.73)	-.07	.47***	—		
4. Belonging	27.88 (8.02)	-.03	.60***	.40***	—	
5. Anxiety	8.53 (5.60)	-.00	-.57***	-.43***	-.42***	—

Note. \*\*\* $p < .001$

Figure 2 shows standardized regression coefficients among variables in the path analysis model, controlling for age, sex, race, first-generation status, and living status. Positivity was positively associated with resilience and belonging. In turn, resilience was negatively associated with anxiety, however belonging was not significantly associated with anxiety. Moreover, positivity was directly associated with anxiety [H1]. A test of indirect effects confirmed that resilience partially mediated the association between positivity and anxiety ( $b$  for indirect effect =  $-.088$ ,  $SE = .024$ ,  $p < .001$ ) [H2]. However, belonging did not mediate the association between positivity and anxiety ( $b$  for indirect effect =  $-.045$ ,  $SE = .032$ ,  $p = .156$ ) [H3]. Together, these findings indicate that resilience, but not belonging, partially mediates the association between positivity and anxiety.

**Figure 2.** Results from the Hypothesized Model Testing



Note. Standardized coefficients are shown above. \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .



## **Chapter 4: Discussion**

Generalized anxiety disorders are among the most prevalent mental health concerns facing the college student population (Brittian et al., 2013). Among the most critical challenges facing universities is the elevated risk for generalized anxiety and other mental health disorders experienced by underprivileged and underrepresented minority students (Cokley, Hall-Clark, & Hicks, 2011; Hurd, Albright, Nigrete, & Billingsley, 2018). Given the significant consequences associated with generalized anxiety, understanding the protective role of psychological resources on anxiety can provide critical knowledge to promote the mental health and well-being of underrepresented and first generation college students (Stebbleton, Soria, Huesman, 2014). The results of the present study contribute significantly to our understanding of the association between positivity and generalized anxiety in underrepresented college students at a stressful time during the semester. Controlling for demographic variables, resilience, but not sense of belonging, partially mediated the association of positivity with generalized anxiety among underrepresented college students. Positivity was negatively associated with anxiety directly and indirectly through resilience, but not through sense of belonging. These findings contribute to the growing body of research that emphasizes the protective roles that psychological resources (e.g., resilience) have on mental health disorders (e.g., anxiety) and suggest the need for further examination of additional psychological resources as mediators.

Our conceptual model was based on the broaden-and-build theory of positive emotions (Fredrickson, 1998, 2001). This theory proposes that individuals who experience greater positivity over time build greater psychosocial resources (e.g. resilience and

belonging) that in turn results in decreased levels of generalized anxiety. As hypothesized, positivity was negatively associated with levels of generalized anxiety in the current study. Although these findings are cross-sectional and cannot indicate causality, they are consistent with other findings showing that positive emotions are related to reduced anxiety (Gloria & Steinhardt, 2016). In the future, prospective cohort studies could investigate whether individuals possessing higher levels of positivity have lower incidence of generalized anxiety disorder over time.

Resilience partially mediated the association between positivity and generalized anxiety, such that individuals who had greater positivity had greater resilience, which in turn was associated with lower generalized anxiety. These results support the notion that, in general, positive individuals are more likely to develop a broadened mindset which builds psychological resilience over time and can counter the experiences of generalized anxiety (Poole, Dobson, & Pusch, 2017). Research has shown that positive emotions are associated with greater psychological resources (Gloria & Steinhardt, 2016) and that greater psychological resources are associated with less anxiety (Avey, Wernsing, & Mhatre, 2011). To build upon the findings of the current study, future research could examine whether increases in positivity enhance future resilience, and whether enhanced resilience ultimately leads to less symptoms of anxiety.

The present study found that positivity was significantly associated with belonging, such that individuals with greater positivity displayed a greater sense of belonging. This finding supports the idea that positive emotions may lead to an improved sense of belonging and the development of positive interactions and relationships across an

individual's social environment (Bowman, 2010). However, belonging did not mediate the association between positivity and generalized anxiety. These results indicate that students' positive sense of belonging may not be related to experiences of generalized anxiety disorders. It is possible that the benefits associated with students' positive sense of belonging are limited to anxiety associated with academic-related stressors. Indeed, data from other studies on college student belonging have demonstrated that positive meaning associated with new relationships formed with faculty, staff, and peers can ultimately support a student in the face of academic stressors, adversity, and moments of anxiety (Nunez, 2009; Pejicic, Ristic, & Andelkovic, 2017).

Results of this study should be considered in light of several limitations. First, the ability to establish strong conclusions concerning mediation is limited due to the cross-sectional design of this study. It is also possible that the data are vulnerable to inaccuracies due to the self-report methods and the data collection procedure through an online survey (Podsakoff, MacKenzie, & Podsakoff, 2012). The participants were recruited from a localized sample of undergraduate students attending a large research university in the state of Texas, USA. Therefore, implications of the results may differ for other underrepresented college students across various institutions or locations (Smith, Chesin, & Jeglic, 2014). Existing research suggests that minority college students interpret their sense of belonging on campus in complex ways (e.g., campus climate, diversity, discrimination), which indicates an importance of measuring belonging using various methods (Nunez, 2009). For example, the use of qualitative methods that allow for student narratives may provide additional insight into students' experiences of belonging and its relationship to anxiety.

Finally, future studies utilizing a longitudinal design are recommended to test these associations and investigate the role of belonging in the association between positivity and subsequent levels of anxiety experienced by minority college students (Brittian et al., 2013). A longitudinal approach can also offer clarity to our conceptual model's direction of associations, for example, whether positivity leads to greater resilience resources or whether resilience resources leads to greater positivity.

Despite these limitations, the present study increases understanding of an important yet understudied phenomenon: resilient adaptation for underrepresented college minority students. College minority students with high resilience are better equipped to handle the frequently changing stressors of the college environment, ultimately allowing them to be open to new experiences and emotionally adaptable when facing adversity (Avey, Luthans, & Jensen, 2009). The findings from our study provide potential value to the intentional design of educational resources to aid the development of psychological resilience. Although academic success was not a variable in this study, an implication is that enhancing resilience education is a valuable area of intervention. For example, the recent development of the Student Curriculum on Resilience Education (SCoRE) provides a framework that addresses the need for resilience building interventions as it pertains to the psychological well-being of college students (DeRosier, Frank, Schwartz, & Leary, 2013). Given recent literature, on average, only 57% of freshman students enrolled at 4-year colleges will eventually graduate from that institution within 6 years (Knapp, Kelly-Reid, Ginder, 2011), and these percentages are even lower for underrepresented college minority students (Ishitani, 2006). Our results suggest that providing the opportunity to

educate and develop psychological resources can be particularly helpful in preparing first-year first-generation college students for the college transition. In conclusion, this study supports the broaden-and-build theory of positive emotions that can be used to further examine positivity and resilience among underrepresented college minority students who are persistent in the face of adversity.

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